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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,609	07/31/2003	Lurakay Bruhn	10021296-1	5153

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AGILENT TECHNOLOGIES, INC.
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Intellectual Property Administration
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EXAMINER

LIN, JERRY

ART UNIT	PAPER NUMBER
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1631

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/633,609	Applicant(s) BRUHN ET AL.	
	Examiner Jerry Lin	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37, 43-53 and 56-70 is/are pending in the application.
- 4a) Of the above claim(s) 14-16, 20-33, 35-37, 43-48, 51-53 and 58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 17-19, 34, 49, 50, 56, 57 and 59-70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' arguments, filed December 20, 2007, have been fully considered and they are not deemed to be persuasive. The following rejections are either reiterated. They constitute the complete set presently being applied to the instant application.

Status of the Claims

Claims 1-13, 17-19, 34, 49, 50, 56, 57, and 59-70 are under examination.

Claims 14-16, 20-33, 35-37, 43-48, 51-53, and 58 are withdrawn as being drawn to a non-elected invention.

Claims 38-42, 54 and 55 are cancelled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-13, 49, 50, 56, 57, 59-63, 65, and 68-70 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaushikkar (US 2002/0024026 A1).

The instant claims are drawn to a method using a chemical array wherein a test request is received, a sub-array appropriate for that test request is determined, exposing the array to a sample, and reading the sub-array.

Regarding claims 1 and 59, Kaushikkar teaches a method of using a chemical array (page 1, paragraph 0011) that includes receiving a test request that uses a sub-array with probes at multiple feature locations (page 6, paragraphs 0059-0061); receiving a pattern based on the test requests which are locations of features that make up a sub-array (page 2, paragraph 0014); exposing the array to a sample (page 3, paragraph 0038); and reading the sub-array (page 2, paragraph 0014), wherein the test request array references a type of test (page 10, paragraph 0089).

Regarding claims 2-13, 59, 60, 61, 65-70, Kaushikkar teaches wherein the memory carries different patterns based on the test request (abstract; page 7, paragraph 0063) as in claims 2 and 4; reading an array with an identifier as in claims 3, 8, 9, 10, and 61 (i.e., a bar code) (page 4, paragraph 0044); wherein signals from feature locations outside the sub-array pattern are not acquired as in claims 5 and 65 (page 2, paragraphs 0016-0017); wherein the signal that represents binding is saved from the sub-arrays and the same signal processing method is used as in claims 6 and 12 (page 10, paragraph 0088-0090); wherein the test request is associated with the array as in claim 7 (page 10, paragraph 0088-0090); wherein multiple test requests associated with an array are read as in claim 11 (page 6, paragraph 0061; page 11, paragraph 0098); wherein the locations outside the sub-array pattern are incapable of providing signal data as in claim 13 (page 2, paragraphs 0016-0017) (i.e., portions of the array are incapable of providing a signal data because they lack a radiation source that is focused on them); where multiple patterns are present on a chemical array as in claims 60 and 68 (page 6, paragraph 0061); where the patterns may be contiguous or

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non-contiguous as in claims 66 and 67 (page 6, paragraph 0061); and where the pattern may or may not overlap as in claims 69 and 70 (page 6, paragraph 0061).

Regarding claims 49, 50, 56, 57, and 63, Kaushikkar teaches an apparatus with an interrogating source and a detector (page 11, paragraph 0094); and a computer program to execute the instant methods (page 11, paragraph 0094).

Regarding claim 62, Kaushikkar teaches transmitting information to and from a remote location (page 7, paragraph 0063; page 9, paragraph 0083; page 11, paragraph 0092).

Response to Arguments

3. Applicants have responded to this rejection by amending claims 1 and 59 to include the limitation of "wherein said test request references a type of test to be performed". Applicants state that Kaushikkar does not teach this limitation. The Examiner disagrees. According the Applicants' specification on page 9, lines 20 and 21, a test request may reference a type of test by using an alphanumeric code or some other identification of test type. Kaushikkar teaches that the user need not specify the locations of the probe-features, but could instead select an array content file, such as selecting from a list of csv files (page 10, paragraph 0089). These files contain the locations of the probe-features to conduct the type of test required. Kaushikkar's csv files may be interpreted as an identification of a test type. Thus, Kaushikkar does anticipate the instant claims.

This rejection is maintained from the previous office action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaushikkar (US 2002/0024026 A1) as applied to claims 1-13, 49, 50, 56, 57, 59-63, 65, and 68-70 above, and further in view of Podyminogin et al. (Nucleic Acids Research (2001) Volume 29, Number 24, pages 5090-5098).

The instant claims are drawn to wherein the feature locations of sub-array patterns outside the retrieved sub-array pattern are incapable of providing a signal data due to cross-linking.

Kaushikkar is applied as above.

Although Kaushikkar shows wherein feature locations outside the retrieved sub-array pattern do not have signal data, Kaushikkar does not teach that this lack of signal data is due to damage from cross-linking or cleavage.

Podyminogin et al. teach that the lack of binding may be caused by cross-linking or cleavage (page 5090, left column)

It would have been obvious to one of ordinary skill in the art at the time of the invention to discern why a no signal data was being produced at a feature location. Although Kaushikkar does not speculate possible reasons why a signal data is not present, it is well known in the art that a cleaved probe may not be able to continue to bind to its target or that cross-linking can damage a probe as stated by Podyminogin et al. Given that these are well-known problems with probes, one of ordinary skill in the art could have arrived at the conclusion that the probes were damaged either by cross-linking or cleavage. Furthermore, one of ordinary skill in the art would have been motivated to discern the problems with the probes in order to fix the problem and conduct an accurate experiment.

Response to Arguments

6. Applicants have responded to this rejection by stating that Kaushikkar does not teach damaging probes at feature locations outside any retrieved sub-array pattern to render them incapable of providing signal data as in claims 13 and 17. The Examiner disagrees. First, claim 13, does not have any recitation of damaging probes, rather it

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states that feature locations outside any retrieved sub-array pattern are rendered incapable of providing signal data. This can be accomplished a variety of ways, including not scanning the feature location.

Secondly, it would be obvious to one of ordinary skill in the art not to scan damaged probes. Podyminogin et al. teach that the probes may be damaged due to cross-linking or a variety of other reasons. Given, that Kaushikkar allows one to choose which locations to scan, one of ordinary skill in the art could choose to scan the undamaged locations rather than the damaged locations taught by Podyminogin et al. In other words, all the claimed elements were known in the prior art, and one of ordinary skill in the art could have combined the elements as taught by Kaushikkar and Podyminogin et al., with no change in their respective functions, and the combination would have yielded the predictable result of not using damaged probes.

Finally, Applicants also state that neither reference teach the limitation of "wherein said test request references a type of test to be performed". Please see above for the Examiner's response.

This rejection is maintained from the previous office action.

7. Claims 34 and 64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaushikkar (US 2002/0024026 A1) as applied to claims 1-13, 49, 50, 56, 57, 59-63, 65, and 68-70 above, and further in view of Sandstrom (US 2005/0079603).

The instant claims are drawn to the same method of claim 1, wherein the feature locations outside the sub-array pattern are masked (claim 64) and the sample is from an

individual and the sub-array pattern is retrieved using the identification of the individual (claim 34).

Kaushikkar is applied as above.

Although Kaushikkar teaches a generic method where portions of an array may be chosen for an experiment by a user, Kaushikkar does not teach the source of a sample or that the features outside the subarray are masked.

Sandstrom teaches a method of masking a microarray and the sample is from an individual and a test is retrieved using the identification of the individual (page 3, paragraphs 0022; page 9, paragraph 099; page 10, paragraph 0104).

It would have been obvious to one of ordinary skill in the art at the time of the invention, to combine the methods of Kaushikkar and Sandstrom to gain the benefit of being able to excite target sites. Sandstrom teaches that using a mask allows the user to target specific sites on a microarray (page 10, paragraphs 0104, 0106). This is advantageous because it allows the user to customize a microarray for a particular experiment. Similarly, Kaushikkar also has a goal of customizing the use of an array based on the user's choice. Given, that Kaushikkar's goal is to customize the use of an array, and Sandstrom teaches a method that allows further customization, one of ordinary skill in the art would have been motivated to combine the methods of Kaushikkar and Sandstrom to customize an array for a particular experiment. Furthermore, Kaushikkar teaches that one advantage of his method is that tests based on the sub-arrays may be run without knowing the scheme of the whole array (page 1, paragraph 0011). Given that Sandstrom teaches that tests are performed on the basis

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of the individual, one of ordinary skill in the art would have been motivated to use Kaushikkar's method of selecting sub-arrays for an individual by using just the individual's identification and not to require the user to know the scheme of the array.

Response to Arguments

8. Applicants have responded to this rejection by relying on their arguments to the previous rejections. Please see above for the Examiner's response.

This rejection is maintained from the previous office action.

Note

9. The Examiner acknowledges that Applicants have pointed out that claims 56, 57, and 63, which are drawn to computer program products, are described in the specification, on page 8, lines 12-18, as tangible products such as floppy disks, hard disks, CDs, and DVDs,

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Lin whose telephone number is (571)272-2561. The examiner can normally be reached on 7:30-6pm, M- Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marjorie A. Moran can be reached on (571) 272-0720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JL/

/Marjorie Moran/
Supervisory Patent Examiner, Art Unit 1631